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# METHOD OF DETERMINING RUBBING FRICTION TORQUE IN A MOTOR VEHICLE POWERTRAIN

## Abstract of the Disclosure

A method of determining the rubbing friction torque involves characterizing fuel cutoff engine deceleration, and calculating the rubbing friction torque for any combination of engine speed and powertrain temperature is calculated in accordance with a base point rubbing friction torque  $RFT_{base}$  determined at a base powertrain temperature  $T_{base}$  and fuel cutoff characterization data. The calibration data characterizing fuel cutoff engine deceleration is obtained by alternately enabling and cutting off engine fuel delivery to cycle the engine speed between specified set points, and measuring and recording the engine deceleration during intervals of fuel cutoff. The rubbing friction torque  $RFT_{test}$  at a given test temperature  $T_{test}$  is calculated according to  $RFT_{test} = (RFT_{base} + PFT_{base}) \times \frac{DECEL_{test}}{DECEL_{base}} - PFT_{test}$ , where  $DECEL_{test}$  and  $DECEL_{base}$  are the fuel cutoff engine decelerations at the test and base points, respectively, and  $PFT_{test}$  and  $PFT_{base}$  are the pumping friction torques at the test and base points, respectively.